Mantis®

Tiller/Cultivator

MODEL 7945

Operator's Manual and Safety Instructions for Tiller/Cultivator

OPERATOR'S/PARTS MANUAL

MAN 430099
Rev. B 9-11-14

Welcome to the World of Mantis Gardening

Here's your new MANTIS Tiller . . . the lightweight wonder that's Changing the Way Americans Garden.®

Unlike big tillers, your MANTIS Tiller weighs only 22 lbs. (Model 7945). So it lifts easily, handles smoothly, tills and weeds precisely. And, unlike other small tillers, it features serpentine tines that churn soil to ten inches deep. It creates a soft, smooth seed bed, even in problem soil.

ATTENTION MANTIS PRODUCT OWNERS!

Get maintenance tips for your Mantis product on our web site at www.mantis.com

Once you know how to use your tiller correctly, we guarantee you'll love it. So first, please read this manual. It shows, step by step, how to use your tiller safely.

IMPORTANT MESSAGE

Thank you for purchasing this Schiller Grounds Care, Inc. product. You have purchased a world class product, one of the best designed and built anywhere.

This machine comes with Operation and Safety instructions, Parts and Service instructions and Engine instructions. The useful life and good service you receive from this machine depends to a large extent on how well you read and understand these manuals. Treat your machine properly, lubricate and adjust it as instructed, and it will give you many years of reliable service.

Your safe use of this Schiller Grounds Care, Inc. product is one of our prime design objectives. Many safety features are built in, but we also rely on your good sense and care to achieve accident-free operation. For best protection, study the manuals thoroughly. Learn the proper operation of all controls. Observe all safety precautions. Follow all instructions and warnings completely. Do not remove or defeat any safety features. Make sure those who operate this machine are as well informed and careful in its use as you are.

See a Schiller Grounds Care, Inc. dealer for any service or parts needed. Schiller Grounds Care, Inc. service ensures that you continue to receive the best results possible from Schiller Grounds Care, Inc. products. You can trust Schiller Grounds Care, Inc. replacement parts because they are manufactured with the same high precision and quality as the original parts.

Schiller Grounds Care, Inc. designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this machine only as directed in the manuals, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Schiller Grounds Care, Inc.
1028 Street Road
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This Operator's / Parts Manual is part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.

Safety Rules & Warnings

You will notice throughout this Operator's Manual Safety Rules and Important Notes. Make sure you understand and obey these warnings for your own protection.

I. SPECIAL SAFETY INFORMATION

⚠ WARNING

Attention: This symbol points out our important safety instructions. When you see this symbol, ⚠ heed it's warning!! Stay alert!!

⚠ WARNING

To reduce the potential for accidents, comply with the safety instructions in this manual. Failure to comply may result in serious personal injury, and/or equipment and property damage.

II. SAFETY & WARNINGS

⚠ WARNING

Improper use or care of this tiller or failure to wear proper protection can result in serious injury. Read and understand the rules for safe operation and all instructions in this manual. Wear hearing and eye protection.

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

III. SAFETY DECAL INFORMATION

An important part of the safety system incorporated in this tiller are the warning and information decals found on various parts of the tiller. These decals must be replaced in time due to abrasion, etc. It is your responsibility to replace these decals when they become hard to read.

P/N 430057

Cutting hazard; keep feet and hands away from rotating tines.

Do not carry the tiller in this position.

Read owner's manual before using tiller, or performing any repair or maintenance. Keep owners manual in a safe place.

Don't operate indoors

Don't fuel, refuel, or check fuel while smoking, or near an open flame or other ignition source.

WARNING OPERATION OF THIS EQUIPMENT MAY CREATE SPARKS THAT CAN START FIRES AROUND DRY VEGETATION. A SPARK ARRESTOR IS INSTALLED. THE OPERATOR SHOULD CONTACT LOCAL FIRE AGENCIES FOR LAWS OR REGULATIONS RELATING TO FIRE PREVENTION REQUIREMENTS.
THIS LABEL MEETS THE CALIFORNIA REQUIREMENTS UNDER 4442.6

P/N 400631

Wear ear and eye Protection.

Caution: when assembling the handles, make sure fuel tank faces away from operator. This is the rear of the tiller, refer to assembly instruction on page 7-8.

Incorrect assembly.

Fuel is extremely flammable.

Stop engine and be sure it is cool before fueling

Keep away from ignition source.

⚠ WARNING

If the tiller is used improperly or safety precautions are not followed, the users risk serious injury to themselves and others.
Read and understand this manual before attempting to operate this tiller.

⚠ WARNING

Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor is installed. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

IV. WARNINGS - DOS

Read and understand the owner's manual. Pay particular attention to all sections regarding safety.

1. **Always** keep a firm grip on both handles while the tines are moving and/or the engine is running. BE AWARE!! The tines may coast after throttle trigger is released. Make sure tines have come to a complete stop and engine is off before letting go of the tiller.
2. **Always** maintain a firm footing and good balance. Do not overreach while operating the tiller. Before you start to use the tiller check the work area for obstacles that might cause you to lose your footing, balance or control of the machine.
3. **Thoroughly** inspect the area where equipment is to be used and remove all objects, which can be thrown by the machine.
4. **Always** keep area clear of children, pets, and bystanders.
5. **Always** stay alert. Watch what you are doing and use common sense. Do not operate unit when fatigued.
6. **Always** dress properly. Do not wear loose clothing or jewelry, they might get caught in moving parts. Use sturdy gloves. Gloves reduce the transmission of vibration to your hands. Prolonged exposure to vibration can cause numbness and other ailments.
7. **While working,** always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.
8. **Always** wear ear and eye protection. Eye protection must meet applicable CE requirements. To avoid hearing damage, we recommend hearing protection be worn whenever using the equipment.
9. **To reduce fire hazard,** keep the engine, and petrol/gas storage area free of vegetative material and excessive grease.
10. **Start** the engine carefully, according to the manufacturer's instructions and with feet well away from tool(s).
11. **Keep** all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
12. **Use extreme caution** when reversing or pulling the machine towards you.
13. **Work only** in daylight or good artificial light.
14. **Always** be sure of your footing on slopes.
15. **Exercise** extreme caution when changing direction on slopes.
16. **Always** keep a safe distance between two or more people when working together.
17. **Always** inspect your unit before each use. Keep all knobs, nuts, bolts and screws tight to be sure the equipment is in safe working condition.
18. **Always** visually inspect to see that the tools are not worn or damaged. Before using your tiller, replace worn or damaged elements and bolts in sets to preserve balance.
19. **Always** maintain and examine your Tiller with care. Follow maintenance instructions given in manual.
20. **Always** store tiller in a sheltered area (a dry place), not accessible to children. The tiller as well as fuel should not be stored in a house.
21. **Always** keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

V. WARNINGS - DON'TS

Don't use tiller with one hand. Keep both hands on handles with fingers and thumbs encircling the handles, while tines are moving, and engine is running.

Don't run with the machine, walk.

Don't work on excessively steep slopes.

Don't attempt to clear tines while they are moving. Never try to remove jammed material before switching the engine off and making sure the tines have stopped completely.

Don't allow children or people unfamiliar with these instructions to use the machine. Local regulations can restrict the age of operator.

Don't let others operate tiller without proper training.

Don't operate while under the influence of alcohol or drugs.

Don't attempt to repair this tiller. Have repairs made by a qualified dealer or repairman. See that only original Mantis parts are used.

Don't overreach. Keep a good footing at all times.

Don't stand in front of tiller when tines are rotating.

⚠ WARNING

Handle fuel with care, it is highly flammable. Fueling a hot engine or near an ignition source can cause a fire and result in serious personal injury and/or property damage.

VI. ENGINE/FUEL WARNINGS - DOS

Always use fresh gasoline. Stale gasoline can cause damage.

Always store fuel in containers specifically designed for this purpose.

Always add fuel before starting the engine.

Always replace all fuel tank and container caps securely.

Always pull starter cord slowly until resistance is felt to avoid kickback and prevent arm or hand injury.

Always operate engine with spark arrestor installed and operating properly.

Stop the engine whenever you leave the machine and before refueling. Allow the engine to cool before storing in any enclosure. Replace worn or damaged parts for safety.

If the fuel tank needs to be drained, this should be done outdoors.

VII. ENGINE/FUEL WARNINGS - DON'TS

Never pick up or carry a machine while the engine is running.

Don't fuel, refuel or check fuel while smoking, or near an open flame or other ignition source. Stop engine and be sure it is cool before refueling.

Don't leave the engine running while the tiller is unattended. Stop the engine when carrying out maintenance and cleaning operations, when changing tools and when being transported by means other than under its own power.

Never remove the cap of the fuel tank or add fuel while the engine is running or when the engine is hot.

Don't refuel, start or run this tiller indoors or in an improperly ventilated area.

Don't run engine when electrical system causes spark outside the cylinder. During periodical checks of the spark plug, keep plug a safe distance from cylinder to avoid burning of evaporated fuel from cylinder.

Don't check for spark with spark plug or plug wire removed. Use an approved tester.

Don't crank engine with spark plug removed unless spark plug wire is disconnected. Sparks can ignite fumes.

Don't run engine when the odor of gasoline is present or other explosive conditions exist.

Do not attempt to start the engine if fuel is spilled, but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.

Don't operate your tiller if there is an accumulation of debris around the muffler, and cooling fins. To reduce the fire hazard, keep the engine and fuel storage area free of vegetative material and excessive grease.

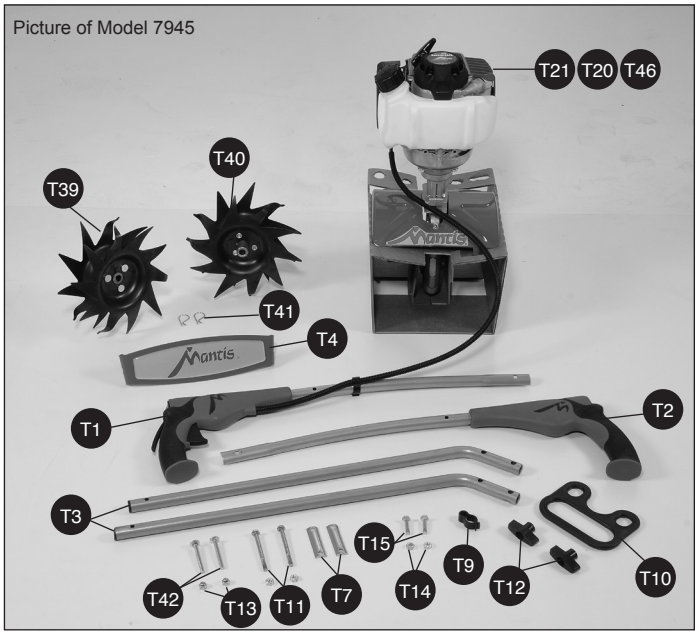
Don't touch hot mufflers, cylinders or cooling fins as contact may cause serious burns.

Don't change the engine governor setting or over speed the engine.

Don't attempt to remove spark plug while engine is hot. Removing a spark plug from a hot engine can cause irreparable damage to the engine and will void your warranty.

Don't use starter fluids as they will cause permanent engine damage.

Assembly

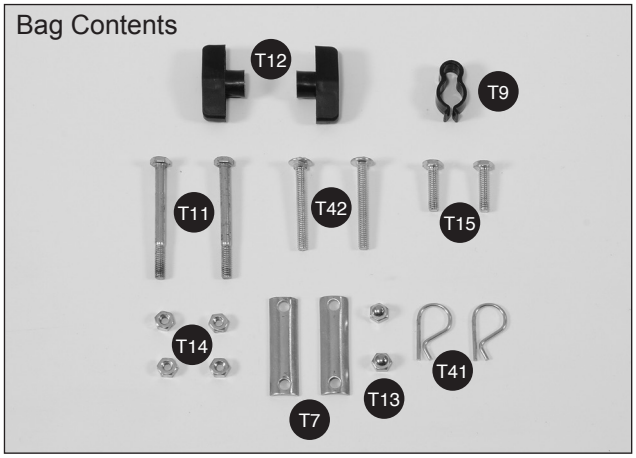


WHAT COMES IN THE BOX

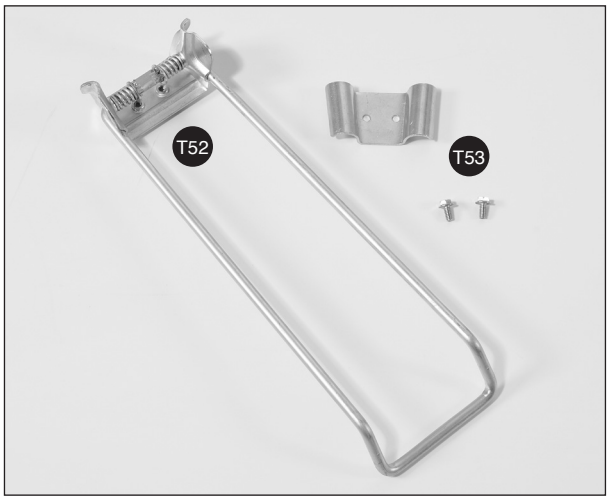
Key	Qty.	Part No.	Description
T1	1		Upper Handle Throttle Side Assembly
T2	1		Upper Handle Assembly, Left
T3	2		Lower Handles W/Plug
T4	1		Handle Brace Assembly
T10	1		Plastic Carrying Handle
T21, T20, T46	1		Engine Assembly (includes Fender Guard & Worm Gear Transmission)
T39/T40	1		Pair Tiller/Cultivator Tines
	1		Bag of Hardware
T7	2		Handle Clamps
T9	1		Throttle Clip
T11	2		Bolts (3” long)
T12	2		Knobs
T13	2		Acorn Nuts
T14	4		Lock Nuts
T15	2		Cap Screws
T41	2		Tine Retaining Pins
T42	2		Carriage Bolts
Not Shown	1	400206	4-Cycle Oil

⚠ WARNING

Improper assembly of this tiller can result in serious injury. Make sure to follow all instructions carefully. If you have any questions, contact our factory at 1-800-366-6268 or an authorized Mantis dealer.



If your tiller comes with a kickstand, your box will also include:



Key	Qty.	Part No.	Description
T52	1		Kickstand Assembly
T53	1		Kickstand Bracket & Hardware Bag

WHAT YOU WILL NEED TO ASSEMBLE THE TILLER

Prior to removing the contents and assembling, it is important to:

- Have a clean work area.
- Make sure all necessary tools are handy.
- You will need two 7/16” wrenches
- A 3/8” wrench for kickstand assembly (if included)

LET'S BEGIN

- With the box upright, open the box and remove the tine box and the loose parts that are at the top of the tiller box. Do not remove any other parts in the box.
- Lay the box on one side and open the bottom flaps.
- Return the box to an upright position (as shown) and pull the box straight up.
- Leave the engine and throttle handle in the cradle to assist in the assembly.
- Lay everything out so you can easily identify the parts (see parts image and list on page 6).

NOTE: Some of the photos in this manual do not represent your tiller engine. They are for assembly purposes only.

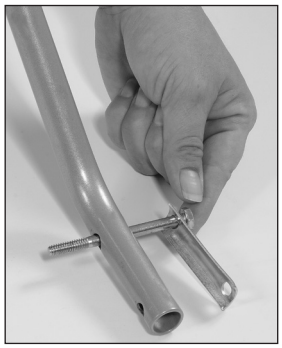
LOWER HANDLE ASSEMBLY

To identify part numbers see page 6.

1

- For ease of assembly and stability it is important that you keep the engine assembly in its cardboard cradle.

2



- Lay the handle parts within easy reach. You'll need one of the handle clamps (T7) and one of the lower handles (T3). Note that the lower handles have a short leg on one end.
- Fit the handle clamp along the outside of the short leg. Line up the holes on the clamp and the leg.

3

- Choose one of the two 3-inch bolts (T11). Slide it through the first set of holes — near the elbow where the lower handle curves. (Pictures 2 & 3)
- Now slide the other lower handle onto the 3-inch bolt. Fit the other clamp onto the other handle's short leg. Add a lock nut (T14) and tighten finger tight. (Picture 3)

4

- Locate recessed channels below the engine.

5

- Take the lower handles that you've just put together. Slide them into the two recessed channels.
- Make sure you insert them from the rear of the tiller **(gasoline tank faces away from the operator)**... so that the bolt fits along the back of the housing.

6

- Slide the second 3-inch bolt (T11)through the second set of holes in the short legs. Add a lock nut (T14) and tighten finger tight until you've completed assembly.

NOTE: THE LOCK NUTS ARE STAMPED. FINGER TIGHT IS APPROXIMATELY 1/2 TO 1-1/2 TURNS UNTIL YOU'VE COMPLETED ASSEMBLY.

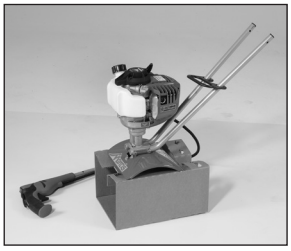
Assembly (Continued)

UPPER HANDLE ASSEMBLY

7a

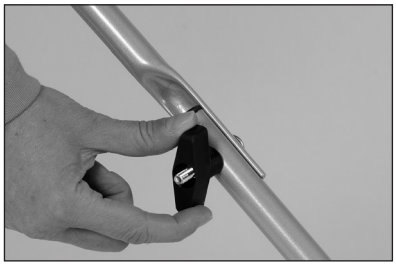
- Lightly squeeze the lower handles (T3) toward one another so that they line up with the two smaller holes on the carrying handle (T10). Then slide the carrying handle over and down the lower handles. It will rest about four to six inches above the fender.
- Gently pull the lower handles out to their original position.

7b



- Your Mantis Tiller will look like this when the lower handle assembly is complete.

8



- Lift the upper handle until it lines up with the lower handle.
- Insert carriage bold (T42) from outside in.
- Screw on knob (T12) and fully tighten the knob at the pivot point.

10

- Follow the same steps to install the other upper handle onto the other lower handle.
- Use the clip (T9) to secure the throttle cable and wire in place on the lower handle.

9

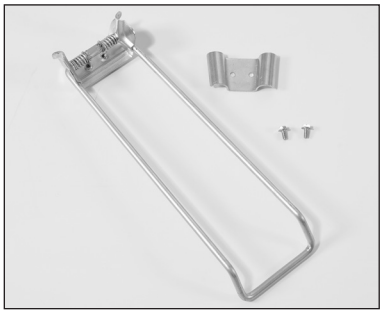
- Cap the exposed bolt with an acorn nut (T13) and tighten with your 7/16” wrench until snug. Do not over tighten.

11

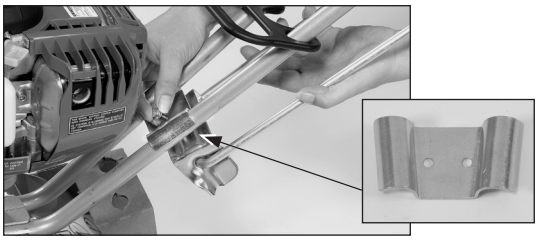
- Now install the handle brace. Line it up with the holes on the upper handles. Then insert a cap screw (T15) and a lock nut (T14) on either side.
- Use a wrench to tighten cap screws and lock nuts.
- Now use wrench to tighten all nuts and bolts firmly and securely.

KICKSTAND ASSEMBLY (If your tiller comes with a kickstand)

1

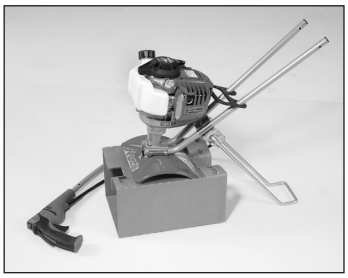


2



- Position the kickstand brace just above the bend of the lower handles.
- Position the kickstand under the lower handles, line up the holes and thread the kickstand brace bolts into the kickstand.
- Tighten with the 3/8” wrench.

3

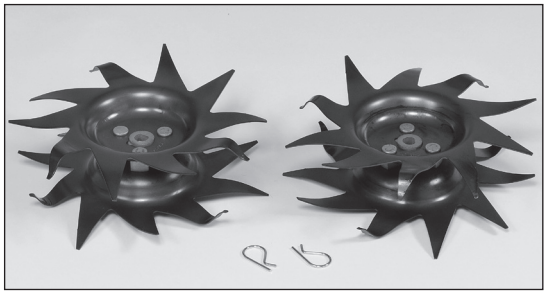


- Your Mantis tiller will look like this when lower handle assembly and kickstand is complete.

Assembly *(Continued)*

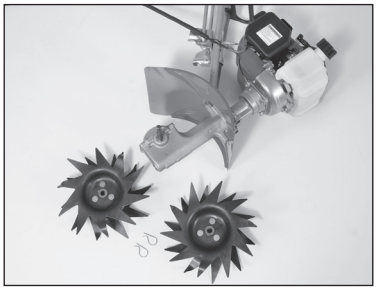
TINE ASSEMBLY

1



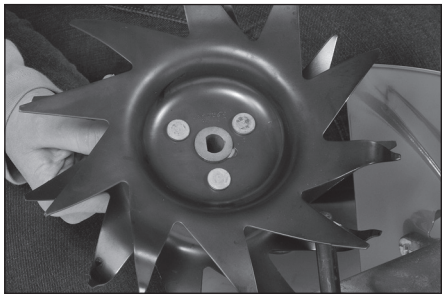
- You'll need the 2 Tines and the 2 retaining pins.

2



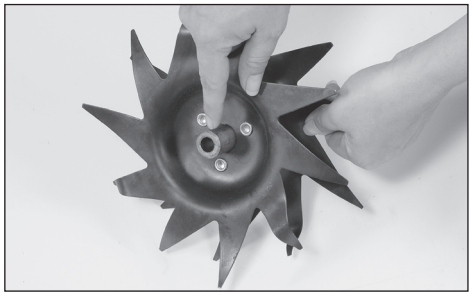
- Remove the unit from the cardboard cradle and lay the unit on its side.

3



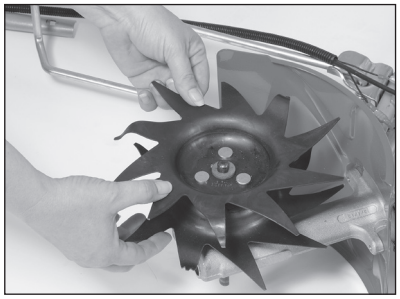
- You will notice that one side of the Tine has a circular hole while the other has a "D" shaped hole.

4



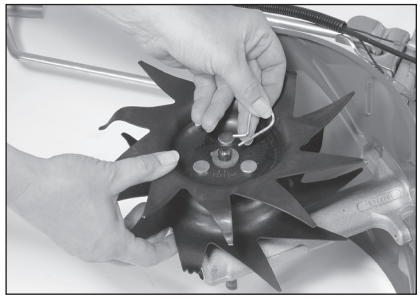
- Attach the Tine so that the circular hole slides onto the axle first.

5



- When the axle protrudes from the other side it will line up perfectly with the "D" shaped hole.

6



7945

⚠ WARNING

Improper Throttle installation can cause tines to rotate unexpectedly.

IMPORTANT NOTE:

Make sure you have installed the handles properly. When you stand behind your tiller, holding the handles, the fender warning label should face you.

IMPORTANT NOTE:

Before you use your MANTIS Tiller, read the Safety Rules & Warnings on pages 3-5

IMPORTANT NOTE:

Be sure you have proper throttle movements and that the throttle cable is not wrapped or twisted around the handle bar. Hold down the lockout lever, fully squeeze the throttle trigger and let go. The throttle triangle must click in both directions. If there is any doubt, remove air filter and visually check that the throttle triangle hits both the idle screw and the full open stop. THIS MUST BE DONE BEFORE STARTING THE ENGINE.

4-Cycle Tiller Fueling & Starting

4-CYCLE TILLER FUELING AND OIL ONLY

IMPORTANT!

It is normal for your 4 stroke engine to smoke for the first minute or two of operation, however it is not necessary for this to occur every time. This is a result of the oil being pulled through the engine for lubrication.

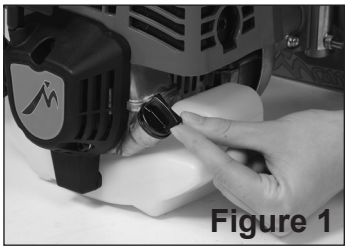
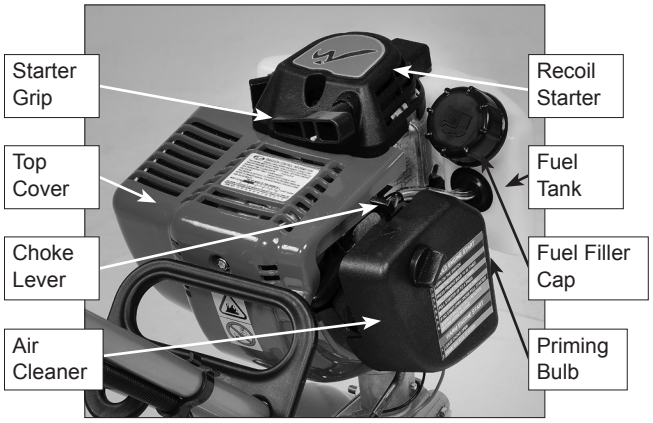


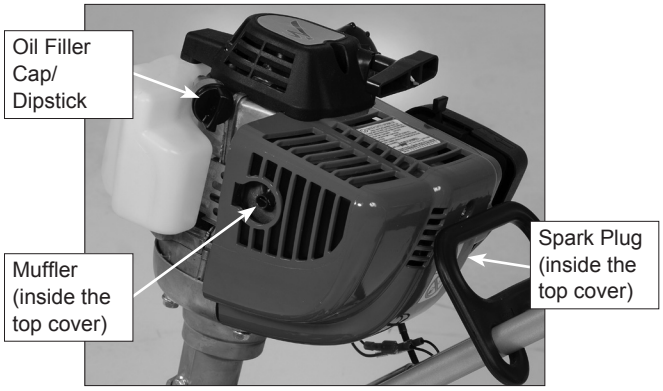
Figure 1

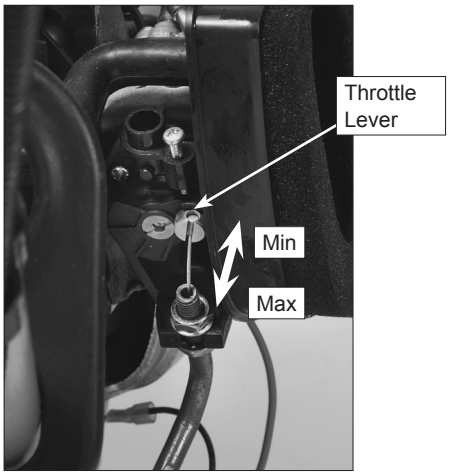
- Rock the tiller forward so that it rests on the fuel tank.
- It is important to position the Mantis 4-Cycle Tiller as shown in **Figure 1** so the oil will properly fill the crankcase. Failure to do so will cause engine damage.
- Remove the oil plug.
- Pour in 2.7 fl. oz. of approved, 4-cycle engine oil. Use 4-stoke motor oil that meets or exceeds the requirements for API service classification SJ or later (or equivalent). Always check the API service label on the oil container to be sure it includes the letters SJ or later (or equivalent). SAE 10W-30 is recommended for general use.
- Always check the oil level before each use. The oil level should reach the inner first thread of the reservoir. Do not overfill.
- Replace the oil plug.
- Then return the unit to the upright position.

Fueling your Mantis 4-Cycle Tiller/Cultivator is easy. Unscrew the gas cap and fill the tank about four-fifths of the way up with 89 octane unleaded gasoline. And remember, always drain the gas when transporting the unit from one location to another.

ENGINE FEATURES







⚠ WARNING • DANGER ⚠

ALTERNATIVE FUELS, SUCH AS E-15 (20% ETHANOL), E-85 (85% ETHANOL) OR ANY FUELS NOT MEETING MANTIS REQUIREMENTS ARE NOT APPROVED FOR USE IN GASOLINE ENGINES. USE OF ALTERNATIVE FUELS MAY CAUSE PERFORMANCE PROBLEMS, LOSS OF POWER, OVERHEATING, FUEL VAPOR LOCK AND UNINTENDED MACHINE OPERATION, INCLUDING, BUT NOT LIMITED TO, IMPROPER CLUTCH ENGAGEMENT. ALTERNATIVE FUELS MAY ALSO CAUSE PREMATURE DETERIORATION OF FUEL LINES, GASKETS, CARBURETORS AND OTHER ENGINE COMPONENTS.

IMPORTANT NOTE:

Check the oil level in the engine before each use. If oil is low see information above for details.

⚠WARNING

Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.

⚠WARNING

Fuel is extremely flammable. Handle it with care. Keep away from ignition sources. Do not smoke while fueling your equipment

⚠WARNING

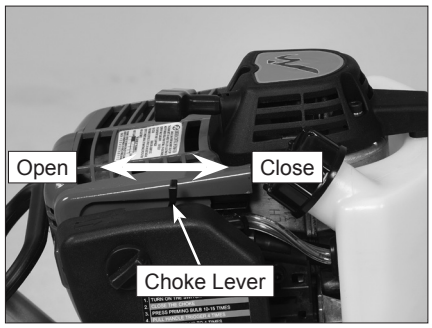
Avoid accidental blade engagement.
Do not squeeze the throttle trigger when starting.
Maintain proper idle speed adjustment (4100±3100 RPM)

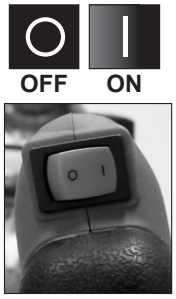
4-Cycle Tiller Fueling & Starting

4-CYCLE TILLER STARTING ONLY

Cold Starting

- First, make sure the start/stop switch, located on the throttle handle, is in the start position, which is indicated by the "I" symbol.
- Close the choke by moving the choke lever to the "Closed" position.





Switch

- Press the primer bulb approximately 10-15 times until he bulb is filled with gas. Once it is filled, press it two more times.
- Pull handle trigger 4 times.
- Pull the starter cord lightly until you feel resistance and then give it a short, brisk pull. Your tiller should start. Do not pull the cord all the way out and do not let it snap back into the starter housing.

NOTE: DO NOT PULL THE CORD MORE THEN 4 TIMES WHEN THE CHOKE IS CLOSED. OVER PULLING MAY CAUSE ENGINE FLOODING.

Bear in mind that , when the engine fires, it only coughs or sputters, and will not run on choke.

- Once it is running, open the choke. Ensure the lever is fully down
- To stop the engine, simply push the start/stop switch to the stop position "O."

Warm Starting

- Leave the choke lever in the "Open" position.
- Pump the primer bulb and pull the starter rope
- Before using the tiller, let the engine run for a minute to warm up. And before shutting it down, let the engine run briefly to cool down.

Re-Fueling

- Follow "Cold Starting" procedure when refilling empty gas tank.

Never use starting fluids as they will cause permanent engine damage. Using them will void the warranty. Before you use the tiller, read the Safety & Warning rules on pages 3-5.

WHAT TO DO JUST IN CASE

If you follow the normal starting procedure, you should have no problem starting your tiller. But, just in case you do have problems, here's what to do.

Make sure the **O/I** switch is on "**I**" (start).You'd be surprised how many people forget to push the switch into the "**I**" (start) position.

If the switch was on "O" (stop) when you pulled the cord, you may have flooded the engine.

⚠ WARNING ⚠

MAKE SURE THE START/ STOP SWITCH IS IN THE STOP POSITION. KEEP PLUG WIRE AWAY FROM ENGINE TO AVOID UNINTENTIONAL SPARK.

IMPORTANT NOTE:

To avoid possible damage to the threads, do not try to remove the plug from a hot aluminum cylinder head.

- First, examine the spark plug.

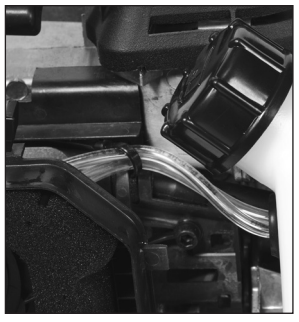
STARTING A FLOODED ENGINE

If the end of the spark plug is wet, the engine may be flooded. **Make sure the switch is in the "O" (stop) position, remove top cover, disconnect spark plug wire and remove plug (Picture 1). Use a paper towel or a clean rag to dry the spark plug, then, with the spark plug out of the engine, pull the starter cord several times.** Next, replace the spark plug. Use the wrench to tighten it and replace the cap. Then, put the switch in the "**I**" (start) position and close choke. Follow steps from "Cold Starting" section (page 11). The engine should start and run.

Picture 1

FUEL LINES CHECK

If the end of the spark plug is dry, check to see if the fuel line is blocked. First loosen the fuel cap to relieve the pressure in the tank. The fuel line runs from the fuel tank to the carburetor. Pull it off at the carburetor end. Fuel should drip slowly from the line. Wipe off any excess or spilled fuel.


Picture 2

If fuel does not drip from the line, check the line for any bends or pinches. (Picture 2). Kinks in the line restrict the flow of fuel to the engine.

4-Cycle Tiller Fueling & Starting *(Continued)*

Just straighten out the line. Reconnect. Then follow the normal starting procedure. If fuel drips too freely, the line may be disconnected from the fuel filter. You'll find the fuel filter inside the fuel tank. Just re-attach the line to the filter, and put the filter back in the tank. Then follow the normal starting procedure.

SPARK PLUG CHECK

Recommended Spark Plug: CMR5H (NGK)

The recommended spark plug has the correct heat range for normal engine operating temperatures.

IMPORTANT NOTE:

An incorrect spark plug can cause engine damage.

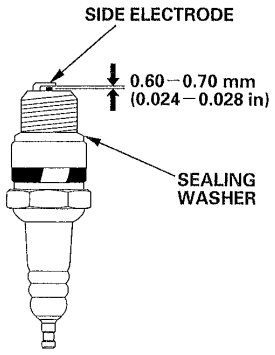
For good performance, the spark plug must be properly gapped and free of deposits.

1. Remove the top cover.
   Loosen the M5 x 10 hex bolt with a hexagon wrench, then remove the top cover. (Picture 1)

⚠ WARNING

Do no operate the engine when the top cover is removed.
Do not pull the recoil starter handle when the top cover is removed.
You may be injured from the rotating parts or burned by the muffler.

2. Disconnect the spark plug cap, and remove any dirt from around the spark plug area (Picture 2).
3. Remove the spark plug with a 5/8-inch spark plug wrench.
4. Inspect the spark plug. Replace it if damaged or badly fouled, if the sealing washer is in poor condition, or if the electrode is worn.
5. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode. The gap should be:
   0.60–.70 mm (0.024–0.028 in)

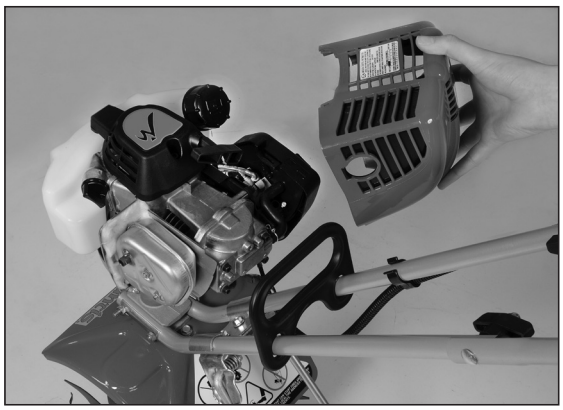


6. Install the spark plug carefully, by hand, to avoid cross-threading.
7. After the spark plug is seated, tighten with a 5/8-inch spark plug wrench to compress the sealing washer.
8. When installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer.
9. When reinstalling the original spark plug, tighten 1/8–1/4 turn after the spark plug seats to compress the washer.

IMPORTANT NOTE:

A loose spark plug can overheat and damage the engine. Overtightening the spark plug can damage the threads in the cylinder head.

10. Attach the spark plug cap to the spark plug.
11. Install the top cover, and tighten the M5 x 10 hex bolt securely with a hexagon wrench.



Picture 1

Picture 2

4-Cycle Tiller Operation

⚠ WARNING

If engine does not stop when switch is put in the stop position, release the throttle, allow engine to idle. Put the tiller down, and slide the choke lever to the cold start (closed) position. Have product serviced before using.

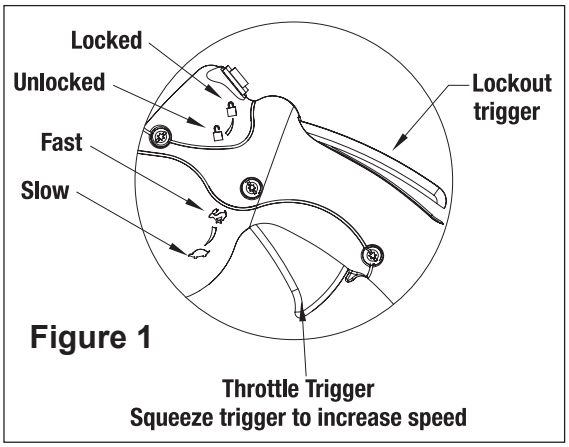


Figure 1

A SPECIAL FEATURE

(With the idle set properly and the engine running)

Even when the engine is running, the tines won't turn unless you squeeze the throttle trigger on the handlebars. When you release the throttle trigger, the tines will stop.

A TIP FOR EXTENDING YOUR ENGINE'S LIFE

After you start the engine, let your tiller warm up for two to three minutes before you use it. Then, before you put your tiller away, let it idle for a minute to give the engine a chance to cool down.

OPERATION

With engine running, and both hands on the handles, hold down the throttle lockout trigger **(Figure 1)**, then squeeze the throttle trigger gradually to increase the engine speed and engage the tines.

NOTE: This step must be repeated each time your tiller trigger is released.

⚠ WARNING

Read the instructions carefully. Be familiar with the controls and the proper use of the equipment.

NOW YOU'RE READY TO USE YOUR MANTIS TILLER.

If you've seen other tillers, your MANTIS Tiller may surprise you. It tills best when you pull it backward! You see, when you pull your MANTIS Tiller backward, you give extra resistance to the tines, so they dig deeper. **(Figure 2)**

In addition, when you go backward, you erase your footprints. So your soil stays light and fluffy. With other tillers, by contrast, you walk right over the soil you've just tilled, packing it down, so it's less plantable.

RUN YOUR MANTIS TILLER LIKE A VACUUM CLEANER

Place your Tiller at the head of the row or area you want to till. Start it up. Then use an easy rocking motion. First, pull your Tiller backward. Then use an easy rocking motion. Again, pull your Tiller backward. Then, let it move forward just a little bit. Then pull it backward again. This will help you till deeper.

Figure 2

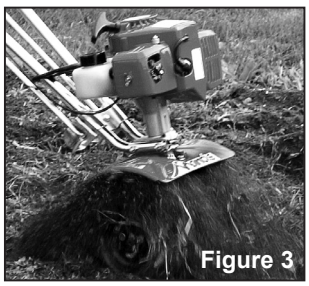


Figure 3

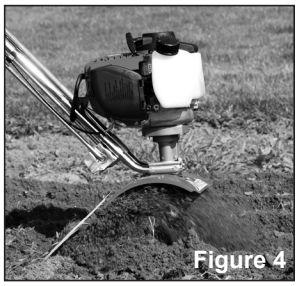


Figure 4

Keep repeating these steps until you've tilled an entire row. Start again on the next row. It's much like running a vacuum cleaner! **(Figure 3)**

You Can Even Control Depth.

For Deeper Tilling:

Move your Tiller slowly back and forth, as you would a vacuum cleaner. Work the same area over and over until you've dug to your desired depth. **(Figure 4)**

For Shallow Tilling:

Switch the tines to the cultivating position. (See page 14 to learn how.) Then move your Tiller quickly over your soil surface.

For Big Weeds or Tough Roots:

Let your Tiller rock back and forth over the tough spot, until the tines slice through the weed or root.

Your MANTIS Tiller Handles Special Tilling Projects:

Want to turn part of your lawn into a colorful flower border? Your MANTIS Tiller makes it easy! Just run your Tiller back and forth until the sod begins to break up. Then continue tilling. Your Tiller will chop the clumps of sod until they're fine. Then, it will work them into the soil. Pretty soon, you'll have a soft, fresh planting bed.

⚠ WARNING ⚠

ALWAYS MAKE SURE THE HANDLE KNOBS ARE SECURE BEFORE STARTING YOUR MANTIS TILLER.

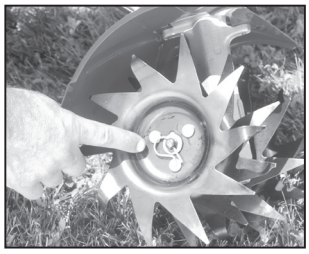
4-Cycle Tiller Operation *(Continued)*

⚠ WARNING

If your tines get jammed or entangled, shut off the engine at once. Remove the obstruction while the engine is off. Never try to remove an obstruction while the engine is running. Serious injury can result.

⚠ WARNING

The operator of this tiller is responsible for accidents or hazards occurring to himself, other people or their property.



YOUR MANTIS TILLER MAKES WEEDING A PLEASURE!

As a tiller, your MANTIS Tiller works the soil down to 10" (25.4 cm) deep. But, as a cultivator, it gently cultivates the surface, only 2" to 3" (5.09 cm to 7.62 cm) deep.

First, you must switch the tines to the weeding, cultivating position. This takes less than a minute.

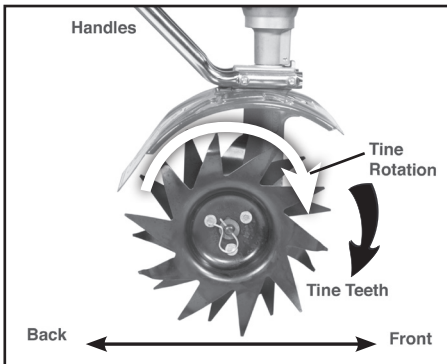
Then, your MANTIS Tiller's sharp "tine teeth" will slice up those pesky weeds, burying them as you go along. And, since the tines in this position won't dig too deep, they won't hurt your plants' precious root systems.

The result? Your Tiller will cut your weeding time in half, and turn a tiresome chore into a pleasure.

HOW TO SWITCH FROM TILLING TO CULTIVATING POSITION (FIGURE 1)

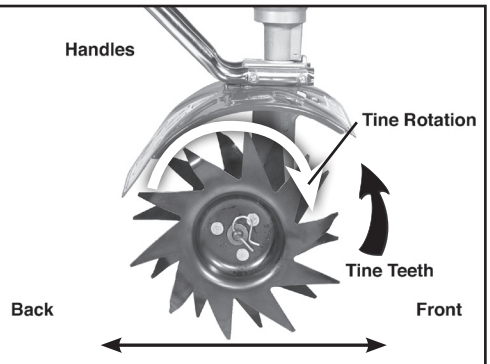
1. Make sure your Tiller is off.
2. Remove the retaining pins from the tines.
3. Remove the tines from the axle.
4. Place the right-side tine onto the left-side axle. Place the left side tine onto the right-side axle. The "D" hole should be to the outside.
5. Reinsert the pins.

Tilling



To set them for tilling, attach the tines so the points of the blades face forward - away from the operator. The tines' points will contact the ground first.

Cultivating



For cultivating, reverse the tines so that the points of the tines face backward - toward the operator. Now the long flat part of the tine's blade will contact the ground first.

Figure 1

4-Cycle Tiller Transportation & Storage

Figure 1

4-CYCLE TILLER TRANSPORTATION

Transporting your Tiller is easy. It's light enough and easy to carry using the carrying handle as seen in **Figure 1**.

Or, with it running, you can walk it by gently squeezing the throttle until it moves at a comfortable pace.

Your tiller is easily transported in the back of a car or truck. Be sure to empty the fuel tank (This is crucial)! Then stow your tiller in the trunk of your car or truck.

Picture 1

⚠ WARNING ⚠

NEVER CARRY YOUR TILLER AS THE PERSON IN PICTURE 1 IS DOING. IF YOU DO, YOU WILL SUFFER SERIOUS INJURY.

TILLER STORAGE

⚠ WARNING

Never store the equipment with fuel in the tank or in an area where fumes may accumulate and breach an open flame or spark

Each fall, or before you store your Mantis Tiller for any long period, be sure to take these measures:

1. Do not store your Tiller with fuel still in it. Even under ideal conditions, stored fuel containing ethanol or MTBE can start to go stale in 30 days. And, since stale fuel has a high gum content, it can clog the carburetor, this, in turn, will restrict fuel flow. Therefore, **when you're ready to store your Tiller, or will not be using it for more than 2 weeks, drain the fuel tank completely.**
2. Next, restart the engine to make sure no fuel is left in the carburetor. Then, run the engine until it stops. This will prevent gum deposits, forming inside of the carburetor and possible engine damage.
3. Disconnect spark plug wire and remove the spark plug. Slowly pull the starter cord once.
4. Inspect the spark plug, and if necessary, clean it. If you need to replace it, buy a NGK-CMR5H.
5. Install the spark plug, but leave the spark plug wire disconnected.
6. Wipe the tines with oil or spray them with WD-40, to prevent rusting.
7. Oil the throttle cable and all visible moving parts. (Do not remove the engine cover.)
8. Clean or replace the air filter.
9. Check or replace fuel filter.
10. Check the grease level in the worm gear housing. Add grease if needed.
11. Store your Tiller in an upright position in a clean, dry place. You can store with the handles in an extended position or folded down.

    To fold the handles down, simply loosen the lower 2-pronged knobs until you can pivot the upper handles down. **(Figure 2)**

    Or it can be hung using the handle brace.
12. Do you have fuel left over from last season? Dispose of it properly. Buy fresh oil and gasoline next season.
13. Remove Tilling Tines or attachments and lightly oil tine shaft at least once a year.

Figure 2

IMPORTANT:

It is important to store your 4-Cycle Mantis Tiller in an upright position. Laying the Tiller on its side will cause the oil to leak out of the engine through the air cleaner case.

IMPORTANT:

Avoid any orientation that places the top cover (engine head) down -this may allow oil from the crankcase to enter the combustion chamber and cause hard starting or a locked piston.

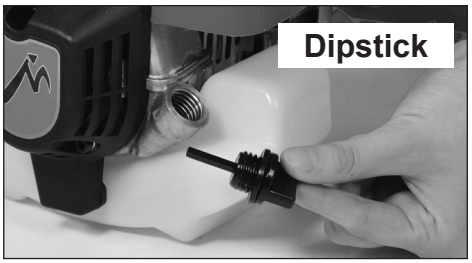
4-Cycle Tiller Maintenance

Your 4 Cycle Tiller will require some basic maintenance to keep it performing year after year.

If you are storing your tiller for the season or longer than 30 days it is very important to empty the fuel tank to prevent engine damage.

Undoubtedly, you will be putting your tiller through rigorous use.

Check engine oil level, air filter and fuel filter.



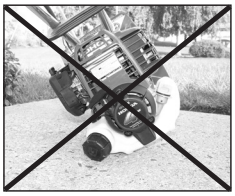
4-CYCLE CORRECTIVE ACTION

If you suspect the engine is overfilled the following procedure should remove the excess oil from the crankcase and valve cover.

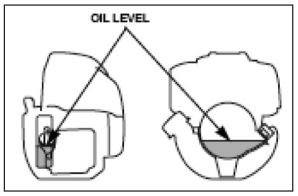
If the engine is overfilled, oil will enter the crankcase and it does not simply pour out of the oil fill opening. The excessive oil has to be pumped out as the engine runs. Checking the oil level and draining any excess between multiple 30 second running intervals will bring the oil back to the proper level.

1. Place the engine on a level surface resting flat on the fuel tank and remove the oil fill cap/dipstick. Use a catch basin for any oil that overflows from the oil fill opening.
2. Replace the oil fill cap/dipstick and run the engine for approximately 30 seconds then repeat step one. Continue steps 1 & 2 until oil no longer overflows when the oil fill cap/dipstick is removed.
3. Once the oil level is corrected the engine may continue to smoke while running for several minutes while the residual oil burns off.

4-CYCLE PROPER OIL FILL/ LEVEL CHECK POSITION



This position does not allow for a proper oil level reading and may cause overfilling.



Engine must be resting on a flat surface on the fuel tank

4-Cycle Tiller Maintenance *(Continued)*

AIR FILTER MAINTENANCE

A wet or dirty air filter can affect the way your engine starts, performs, and wears. So, it's a good idea to check your air filter once a month.

If you work in dusty soil, or if you want to be on the safe side — check your filter more often (for instance, before each use). But be sure to replace it at least once a year, in the spring or fall.

How to Check, Clean and Change the Air Filter

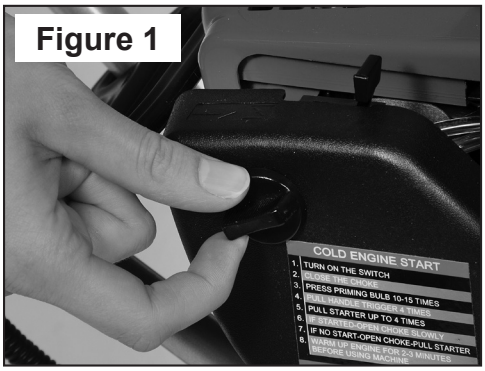
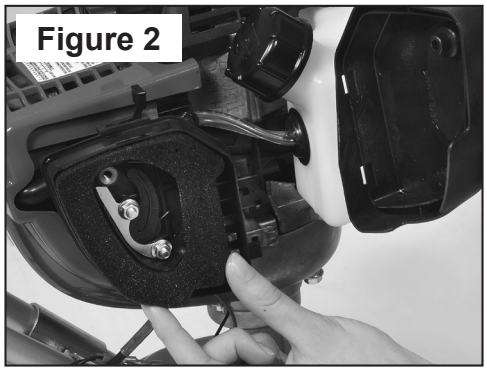


Figure 1
COLD ENGINE START
1. TURN ON THE SWITCH
2. CLOSE THE CHOKE
3. PRESS PRIMING BULB 10-15 TIMES
4. PULL STARTER UP TO 4 TIMES
5. IF STARTED-OPEN CHOKE SLOWLY
6. IF NO START-OPEN CHOKE-PULL STARTER
7. WARM UP ENGINE FOR 2-3 MINUTES BEFORE USING MACHINE



1. The air filter is held in the air cleaner in a black housing on the side of the tiller, behind the gas tank cap.
2. Loosen the knob on the side of the air cleaner cover. **(Figure 1)**
3. Take off the cover. Make sure to clear plastic tabs on the side
4. The air filter is the dark sponge like material on the inside of the air cleaner. Check whether it is soiled or moist.
5. If the air filter needs to be cleaned or no longer fits properly, simply remove it by carefully peeling it out of the air cleaner. **(Figure 2)**
6. To clean the air filter
   a. Clean the filter element in warm soapy water, rinse and allow to dry thoroughly. Or, clean in a non-flammable solvent and allow to dry.
   b. Dip the filter element in clean engine oil, then squeeze out all excess oil. The engine will smoke when started if too much oil is left in the element.
   c. Wipe dirt from the air cleaner body and cover, using a moist rag. Be careful to prevent dirt from entering the carburetor.
7. Insert your clean filter inside the air cleaner.

FUEL FILTER REPLACEMENT

The fuel filter should be replaced every year. Open the fuel cap and using the cap retainer you can remove the fuel intake line. The filter is at the end.

Hold the fuel line and work the filter out. Then just push the new one back into the tube making sure the clamping wire is up high enough to engage with the stem of the filter.

IMPORTANT:

Make sure the filter is "seated" properly in the cover. The filter must fit snugly inside the opening that holds the filter in place. Installing the filter incorrectly will cause engine damage and void the warranty. Fit the cover back over the air cleaner and tighten the knob to secure the cover.

IMPORTANT NOTE:

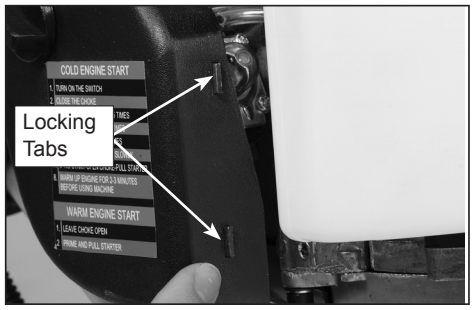
A dirty air cleaner will restrict air flow to the carburetor, reducing engine performance. If you operate the engine in very dusty areas, clean the air filter element more often then specified in the Maintenance section.

IMPORTANT NOTE:

Operating the engine without an air filter element, or with a damaged air filter element, will allow dirt to enter the engine, causing rapid engine wear. This type of damage is not covered by the Limited Warranty

IMPORTANT NOTE:

Please check the lip on the Air Cleaner Cover. If the lip is chipped or cracked, it should be replaced. This will prevent dirt from being ingested through the carburetor into the inside of the engine.



4-Cycle Tiller Maintenance *(Continued)*

HOW TO RESEAT THE FLANGE

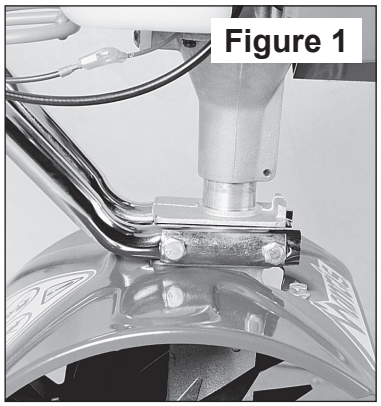
At some point, you may find that the tines won't turn when you press the throttle. This may mean the engine isn't sitting all the way down on the worm gear housing.

Perhaps you've been using your Tiller for several years. Or perhaps you've removed the engine for use with our hedge trimmer attachment, then replaced it. In either case, the flange bolt may have come loose and lifted the engine up.

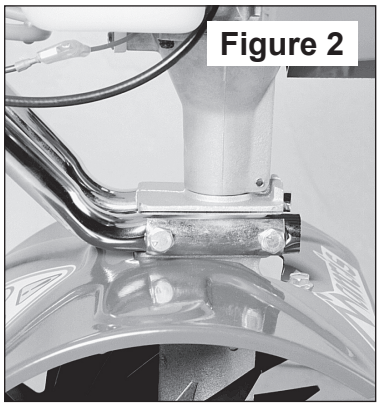
If this happened you'll notice a gap between the bottom of the engine clutch case and the top of the worm gear housing. **(Figure 1)**

To fix this, loosen the flange bolt. Take the engine off the worm gear housing. Notice the hex head on top of the drive shaft . Inside the clutch case, you'll find the clutch drum. Make sure the hex head lines up with the clutch drum inside the clutch case.

Then put the engine back on the worm gear housing. Make sure the plastic carrying handle is not under the fuel tank.



Note how the engine doesn't sit all the way down on the transmission.



Note how the engine sits all the way down on the transmission.

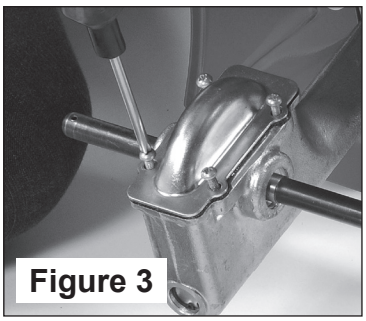
If you've followed these steps properly, there will be no gap between the clutch case and the worm gear housing. **(Figure 2)** Make sure you tighten the flange bolt!

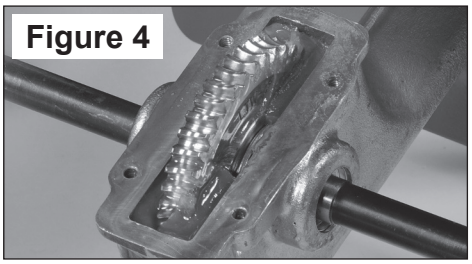
TRANSMISSION CARE

Check the transmission grease level after the first 10 hours of use, then check yearly.

With the tines off, remove the transmission plate **(Figure 3)** and gasket to see if the grease level is up to the plate flange **(Figure 4)**. If it is not, you will need to add lithium zero or lithium one grease.

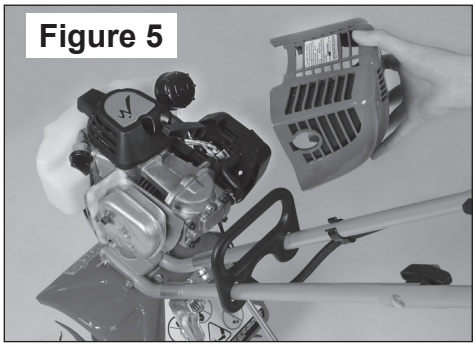
Wipe off any excess grease, replace the transmission gasket and plate.

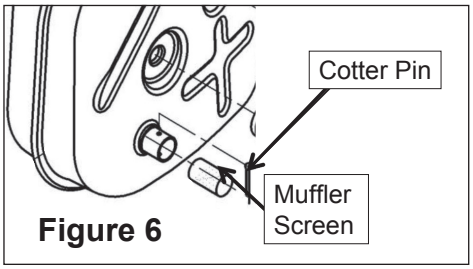




CLEANING THE MUFFLER SCREEN

1. Remove the engine cover (Figure 5)
2. Disconnect the spark plug cap from the spark plug.
3. Remove the cotter pin. (Figure 6)
4. Remove the muffler screen.
5. If screen is clogged it needs to be cleaned. use carburetor cleaner, and any brush that is not metal. Brush the screen until you are able to see through it.
6. If the screen remains clogged after attempts at cleaning, it must be replaced.
7. Re-install the muffler screen, spark plug cap and engine cover.





Troubleshooting

Problem	Cause	Remedy
1. Tines don't turn when throttle is depressed	• Engine is not seated properly on the gear housing.	• Re-install engine following the instructions on page 18 "How to reseat the flange".
2. Engine fails to start	• **O/I** switch is in "**O**" position. • No fuel in tank. • Fuel strainer clogged. • Fuel line clogged. • Spark plug shorted or fouled. • Spark plug is broken (cracked porcelain or electrodes broken) • Ignition lead wire shorted, broken or disconnected from spark plug. • Ignition inoperative	• Move switch to "**I**" • Fill Tank. • Replace Strainer. • Clean fuel line. • Install new spark plug. • Replace spark plug. • Replace lead wire or attach to spark plug. • Contact Mantis customer service.
3. Engine hard to start.	• Water in gasoline. • Gasket leaks (carburetor or cylinder base gasket). • Weak spark at spark plug.	• Drain entire system and refill with fresh fuel. • Contact Mantis customer service.
4. There is black smoke coming from exhaust	• The muffler screen is clogged	• Clean carbon from muffler screen following instructions on page 18.
5. Engine misses.	• Dirt in fuel line or carburetor. • Carburetor improperly adjusted. • Spark plug fouled, broken or incorrect gap setting. • Weak or intermittent spark at spark plug.	• Remove and clean. • Contact Mantis customer service. • Clean or replace spark plug - set gap to .024-.028 in. (0.6-0.7 mm) • Contact Mantis customer service.
6. Engine lacks power.	• Air filter clogged. • Muffler clogged. • Spark Arrestor Clogged. • Poor compression.	• Clean or replace air filter page 17. • Clean carbon from muffler, page 18. • Clean Spark Arrestor, page 12. • Contact Mantis customer service.
7. Engine overheats.	• Air flow obstructed	• Clean flywheel cylinder fins and screen.
8. Engine noisy or knocking.	• Spark plug in incorrect heat range. • Bearings, piston ring or cylinder walls are worn.	• Replace with plugs specified for engine. • Contact Mantis customer service.
9. Engine stalls under load.	• Engine overheats.	• Remove dust and dirt from between fins.

Engine Maintenance Schedule

REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, whichever comes first.		Each use	First month or 10 hrs	Every 3 months or 25 hrs	Every 6 months or 50 hrs	Every year or 100 hrs	Every 2 years or 300 hrs
Engine oil	Check level	•					
	Change		•		•		
Air cleaner	Check	•					
	Clean			•(1)			
Spark plug	Check-adjust					•	
	Replace						•
Spark arrester (Applicable types)	Clean					•	
Engine cooling fins	Check				•		
Nuts, bolts, fasteners (Retighten if necessary)	Check	•					
Clutch shoes	Check				•(2)		
Idle speed	Check-adjust					•(2)	
Valve clearance	Check-adjust					•(2)	
Combustion chamber	Clean	After every 300 hrs. (2)					
Fuel filter	Check					•	
Fuel tank	Clean					•	
Fuel tubes	Check	Every 2 years (Replace if necessary) (2)					
Oil tube	Check	Every 2 years (Replace if necessary) (2)					
Timing belt	Check	After every 100 hrs.(2)(4)					

(1) Service more frequently when used in dusty areas.

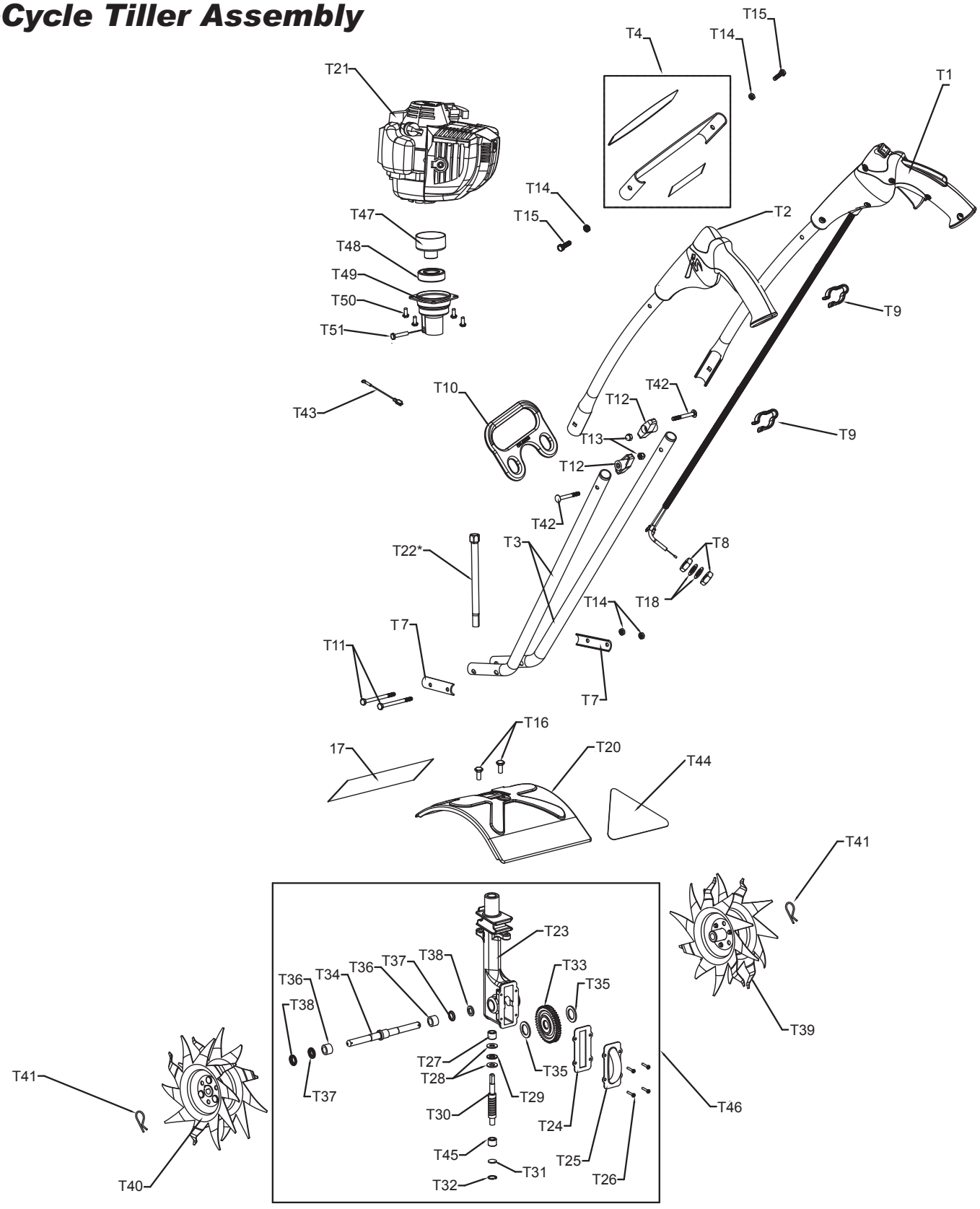
(2) These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to the shop manual for service procedures.

(3) For commercial use, log hours of operation to determine proper maintenance intervals.

(4) Check the belt and replace if it is abnormal.

Failure to follow this maintenance schedule could result in non warrantable failures.

4-Cycle Tiller Assembly



Key	Qty.	Part No.	Description
T1	1	430070	Trigger Handle Assembly, 4 Cycle Engine, Right
T2	1	430071	Handle Assembly, Left
T3	2	430082	Lower Handle W/Plug
T4	1	430084	Handle Brace Assembly
T7	2	377	Handle Clamp
T8	2	4078	M6 Jam Nut
T9	2	478	Throttle Clip
T10	1	400315	Carry Handle
T11	2	470	Bolt 1/4-20 X 3”
T12	2	400523	Knob, Two Prongs, Female
T13	2	395	Acorn Nut
T14	4	972	1/4-20 Two-Way Lock Nut
T15	2	144-2	1/4-20 X 1.125 Hex Head Cap Screw
T16	2	140	Bolt 1/4-20 X 3/8” Long
T17	1	430058	Mantis Logo Label
T18	2	4079	M6 Internal Lock Washer
T20	1	465	Fender Guard
T21	1	4170076	Engine Assembly-26CC 4 Cycle
T22*	1	468	Drive Shaft
T23	1	466	Worm Gear Housing
T24	1	436	Gasket
T25	1	437A	Gear Housing Cover
T26	4	651	#8 Self Tapping Screw
T27	1	423	Roller Bearing

*Also in key T46

Key	Qty.	Part No.	Description
T28	2	425	Worm Bearing Race
T29	1	424	Worm Thrust Bearing
T30	1	422	Worm Shaft
T31	1	426	Worm Disk
T32	1	428	Retaining Ring
T33	1	429	Worm Gear
T34	1	431	Tine Shaft
T35	2	430	Worm Gear Thrust Washer
T36	2	432	Worm Gear Bearing
T37	2	434	Bearing Seal
T38	2	435	Bearing Seal Retainer
T39	1	438RA	Tine Assembly, Right
T40	1	438LA	Tine Assembly, Left
T41	2	418-1	Tine Retaining Pin
T42	2	430039	Carriage Bolt 1/4-20 X 2.25”
T43	1	430043	Ground Wire Jumper, 4 Cycle Engine
T44	1	400631	Triangle Warning Label (4 Cycle Engine)
T45	1	458	Roller Bearing
T46	1	400010	Transmission Assembly
T47	1	400131	Clutch Drum
T48	1	400132	Bearing
T49	1	400130	Engine Flange
T50	4	400511	M6 X 12 Flange Bolt
T51	1	910502	10-32 X 3/4” Flange Bolt

EMISSION CONTROL WARRANTY STATEMENT FOR MANTIS

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board, The United States Environmental Protection Agency(US EPA) and JIANGSU LINHAI POWER MACHINERY GROUP CORP , are pleased to explain the emission control system warranty on your 2014 model year small off-road engine. In the United States and California new small off-road engines must be designed built and equipped to meet the State's stringent anti smog standards. JIANGSU LINHAI POWER MACHINERY GROUP CORP must warrant the emission control system on your small off-road engine for the periods of time listed below provided there has been no abuse neglect or improper maintenance of your small off-road engine.

Your emission control system may include parts such as the carburetor or fuel injection system,the ignition system. Also included may be hoses and other emission related assemblies.

Where a warrantable condition exists, JIANGSU LINHAI POWER MACHINERY GROUP CORP will repair your small off-road engine at no cost to you including diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. JIANGSU LINHAI POWER MACHINERY GROUP CORP recommends that you retain all receipts covering maintenance on your small off-road engine, but JIANGSU LINHAI POWER MACHINERY GROUP CORP cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine owner, you should however be aware that JIANGSU LINHAI POWER MACHINERY GROUP CORP may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine to a JIANGSU LINHAI POWER MACHINERY GROUP CORP distribution center as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, contact JIANGSU LINHAI POWER MACHINERY GROUP CORP authorized warranty service facility:

TEL: "1-888-529-9065".

EMAIL: linhaiusa.Ronald@aol.com

ADDRESS: 1715 Lakes Pkwy Lawrenceville, GA 30043

This telephone number is only for the engines which the company name "JIANGSU LINHAI POWER MACHINERY GROUP CORP" on the emission label.

Defects warranty requirements:

(a) The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser.

(b) General Emissions Warranty Coverage. JIANGSU LINHAI POWER MACHINERY GROUP CORP warrants to the ultimate purchaser and each subsequent owner that the engine or equipment is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by US EPA & Air Resources Board; And

(2) Free from defects in materials and workmanship that causes the failure of a warranted part for a period of two years.

(c) The warranty on emissions-related parts will be interpreted as below:

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions required by subsection (d) must be warranted for the warranty period defined in Subsection(b)(2). If any such part fails during the period of warranty coverage, it must be repaired or replaced by JIANGSU LINHAI POWER MACHINERY GROUP CORP according to Subsection (4) below. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

(2) Any warranted part that is scheduled only for regular inspection in the written instructions required by subsection(d)must be warranted for the warranty period defined in Subsection(b)(2).A statement in such written instructions to the effect of "repair or replace as necessary" will not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for the remaining warranty period.

(3) Any warranted part that is scheduled for replacement as required maintenance in the written instructions required by subsection (d) must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part must be repaired or replaced by JIANGSU LINHAI POWER MACHINERY GROUP CORP according to Subsection (4) below. Any such part repaired or replaced under warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

(4) Repair or replacement of any warranted part under the warranty must be performed at no charge to the owner at a warranty station.

(5) Notwithstanding the provisions of Subsection (4) above, warranty services or repairs must be provided at all JIANGSU LINHAI POWER MACHINERY GROUP CORP distribution centers that are franchised to service the subject engines.

(6) The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective provided that such diagnostic work is performed at a warranty station.

(7) JIANGSU LINHAI POWER MACHINERY GROUP CORP is liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

(8) Throughout the emissions warranty period defined in Subsection (b)(2), JIANGSU LINHAI POWER MACHINERY GROUP CORP must maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

(9) Any replacement part may be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner such use will not reduce the warranty obligations of JIANGSU LINHAI POWER MACHINERY GROUP CORP

(10) Add-on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts will be grounds for disallowing a warranty claim. JIANGSU LINHAI POWER MACHINERY GROUP CORP will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

(11) JIANGSU LINHAI POWER MACHINERY GROUP CORP issuing the warranty shall provide any documents that describe that manufacturer's warranty procedures or policies within five working days of request by the US EPA &Air Resources Board.

(d) Emission Warranty Parts List.

(1) Electronic Ignition System

(2) Spark Plug

(3) Carburetor [complete assembly or replaceable components)

(4) Fuel-injection Assembly (or replaceable components)

(5) Fuel Tank

(6) Fuel Cap Assembly

(7) Fuel Feed Line (Fuel hoses Fuel strainer seals)

(8) Air Filter

(9) Air filter housing

(10) Crankcase breather tube, Oil filler cap

JIANGSU LINHAI POWER MACHINERY GROUP CORP will furnish with each new engine written instructions for the maintenance and use of the engine by the owner.

LIMITED WARRANTY

MANTIS extends this limited warranty against defects in material and workmanship for a period of five (5) years under normal usage for residential purposes and two (2) years under normal usage for commercial purposes, from the date of purchase by the original purchaser.

MANTIS will repair or replace, at its option, any part or parts of the product found to be defective in material or workmanship during the warranty period. Warranty repairs and replacements will be made without charge for parts or labor. All parts replaced under warranty will be considered as part of the original product, and any warranty on the replaced parts will expire coincident with the original product warranty. If you think your MANTIS TILLER is defective in material or workmanship, please contact customer service at 800-366-6268 for the location of an authorized servicing dealer or send it, along with your proof of purchase (sales receipt) to:

Mantis

1028 Street Road
Southampton, PA 18966

You are responsible for pickup and delivery charges; if shipping to factory the product must be returned to us postage paid. Engines are warranted separately by the engine manufacturer

MANTIS assumes no responsibility in the event that the product was not assembled or used in compliance with any assembly, care, safety, or operating instructions contained in the Operators Manual or accompanying the product. This limited warranty does not cover damages or defects due to normal wear and tear, lack of reasonable and proper maintenance, failure to follow operating instructions or operators manual, misuse, lack of proper storage or accidents. This limited warranty shall not be effective if your Mantis tiller has been subjected to negligence or has been repaired or altered by anyone other than an authorized dealer or authorized service center.

You must maintain your MANTIS TILLER by following the maintenance procedures described in the operators manual. Such routine maintenance, whether performed by you or a dealer, is at your expense.

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